UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/403,429	10/20/1999	TOSHIHIRO SHIMIZU	2535USOP	7265

23115 7590 01/03/2005

TAKEDA PHARMACEUTICALS NORTH AMERICA, INC
INTELLECTUAL PROPERTY DEPARTMENT
475 HALF DAY ROAD
SUITE 500
LINCOLNSHIRE, IL 60069

EXAMINER	
TRAN, SUSAN T	

ART UNIT	PAPER NUMBER
1615	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/403,429	SHIMIZU ET AL.	
	Examiner	Art Unit	
	Susan T. Tran	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20,21,23-26 and 28-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20,21,23-26 and 28-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/14/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of applicant's Information Disclosure Statement filed 10/14/04.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 10/14/04 was filed after the mailing date of the Non-final Office action on 07/15/04. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 20, 21, 23-26 and 28-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Depui et al. US 6,365,184.

The claims are drawn toward an orally disintegrable tablet comprising lansoprazole, 5-97% sugar, and low-substituted hydroxypropylcellulose (L-HPC) having

5 to 7% by weight of hydroxypropoxyl group. Claims 20, 21 and 23-26 are drawn to a method of preparing the orally disintegrable tablet.

Depui discloses an oral dosage form comprising proton pump inhibitor including lansoprazole (column 3, lines 54-67, and column 6). The proton pump inhibitor is coated with hydroxypropyl cellulose, mannitol, and other pharmaceutically acceptable ingredients alone or in mixtures (column 9, lines 7-35, and examples 3, 12, 17), and then mixed with L-HPC to be compressed into tablet having disintegration time between 15-30 seconds (examples 2, 5, columns 16 and 20). With respect to claim 32, wherein the L-HPC is separated from the fine granules containing lansoprazole; Depui discloses the separating and the enteric coating layers outside of the proton pump inhibitor core before admixing with L-HPC (columns 9-10, and example 2).

It is noted that Depui does not teach the percent substitution of the hydroxypropoxyl group. However, it is the position of the examiner that the L-HPC of Depui would have a similar percent substitution of the hydroxypropoxyl group because Depui teaches the use of L-HPC to obtain a similar fast disintegrating tablet dosage having disintegration time falls within the claimed range (example 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 20, 21, 23-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depui et al., in view of Makino et al.

Depui is relied upon for the reason stated above. Depui does not expressly teach the percent substitution of a hydroxypropoxyl group in the L-HPC.

Makino teaches a composition comprising granules having a core coated with spraying powder containing drug, L-HPC having a hydroxypropoxyl group of about 4-20%, and sucrose (column 1, lines 55-68, and column 3, lines 45-56). The drug can be selected from the group including benzimidazole (column 2, line 18). Makino also teaches the granules can be further coated with Eudragit® (enteric) (column 4, lines 15-29).

It is noted that the composition of Makino exhibit excellent disintegration time. Nonetheless, Makino teaches a disintegration time of 1 minute. However, it appears that the disintegration time is obtained in the use of L-HPC having a hydroxypropoxyl group of 10-13% (see example 1, column 4, lines 58-60). Thus, it would have been obvious for one of ordinary skill in the art to, by routine experimentation select L-HPC having a content of the hydroxypropoxyl group from about 4 as disclosed in column 1,

lines 64-67 with the expectation of providing a faster disintegrating dosage form. Accordingly, one of a skilled artisan would have been motivated to modify the disintegrable dosage form of Depui using the L-HPC in view of teaching of Makino with the expectation to obtain a faster disintegrable tablet dosage form.

Claims 20, 21, 23-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depui et al., in view of Ohno et al. US 5,958,453.

Depui is relied upon for the reasons stated above.

Ohno teaches a pharmaceutical composition comprising 5-95% erythritol, L-HPC, and gastrointestinal agents (column 2, lines 13-25, column 3, lines 5-10, and column 5, lines 20-41). Ohno also teaches that the composition has a bucal dissolution rate of about 0.1-1.0 minute (column 6, lines 63-67).

It is noted that the cited references do not expressly teaches the percent substitution of a hydroxypropoxyl group in the L-HPC. However, where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). It is noted that, both, Depui and Ohno teaches the use of L-HPC to obtain fast disintegrable dosage forms that exhibit a disintegration time of less than 60 seconds, which falls with the claimed range. Accordingly, the applicant has the burden of showing that the L-HPC taught by Depui and Ohno does not have the claimed percent substitution of a hydroxypropoxyl. *In re*

Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Thus, it would have been obvious for one of ordinary skill in the art to modify the dosage form of Depui using the sugar and the L-HPC in view of the teaching of Ohno with the expectation to provide a solid dosage form that exhibits a fast bucal disintegratability and dissolubility.

Response to Arguments

Applicant's arguments filed 10/14/04 have been fully considered but they are not persuasive.

Applicant argues that Depui disclosed the disintegration time were performed in water, Depui does not indicate that bucal dissolution times were tested. Depui does not disclose the exact test procedures, and there is no suggestion that the disintegration times were recorded in humans. However, it is noted that the claimed invention is directed to a method for preparing a rapidly disintegrable solid preparation. Nowhere in the claims require the testing procedures as being argued by the Applicant. Depui discloses an oral dosage form comprising proton pump inhibitor including lansoprazole (column 3, lines 54-67, and column 6). Depui also discloses the use of L-HPC to obtain a fast disintegrating tablet having disintegration time of about 15-30 seconds (example 2). The fast disintegrating tablet taught by Depui is for oral administration, nothing in Depui indicates that the tablet will not exhibit the same disintegrating time in a patient mouth, intra-orally, or bucally. Accordingly, the burden is shifted to applicant to provide data showing the tablet taught by Depui will not disintegrate in a patient's mouth. Similarly, it is the position of the Examiner that the L-HPC of Depui would have a similar

percent substitution of the hydroxypropoxyl group because Depui teaches the use of L-HPC to obtain a similar fast disintegrating tablet dosage having disintegration time falls within the claimed range.

Applicant argues that the deficiencies of Depui are not cured by Makino, because Makino only discloses L-HPC having 10-13% substitution with hydroxypropoxyl groups. There are no examples of the presently claimed L-HPC. Contrary to the applicant's argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Makino cannot be limited to his best mode as described in the examples. Makino teaches a fast disintegrating dosage form with the use of L-HPC having a content of the hydroxypropoxyl group from about 4 as disclosed in column 1, lines 64-67. Thus, it would have been obvious for one of ordinary skill in the art to, by routine experimentation select L-HPC having hydroxypropoxyl group from about 4 with the expectation of providing a faster disintegrating dosage form, because Depui teaches dosage form using L-HPC to obtain a disintegrating time of about 15-30 second, and because Makino teaches the desire to obtain a fast disintegrating dosage form using L-HPC having a hydroxypropoxyl group of about 4-20%.

Applicant argues that the deficiencies of Depui are not cured by Ohno, because Ohno teaches bucal dissolution time was considerably longer than the 0.1-1.0 minute

range cited in col. 6, lines 66-67. However, similar to Makino, Ohno cannot be limited to his best mode as described in the examples. Ohno teaches a pharmaceutical composition comprising L-HPC (column 2, lines 13-25, column 3, lines 5-10, and column 5, lines 20-41). Ohno also teaches that the composition has a bucal dissolution rate of about 0.1-1.0 minute (column 6, lines 63-67). Thus, it would have been obvious for one of ordinary skill in the art to, by routine experimentation select L-HPC having a suitable hydroxypropoxyl group with the expectation of providing a fast disintegrating dosage form having bucal dissolution rate of about 0.1-1.0 minute.

Pertinent Arts

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mizumoto et al., and Makino et al. are cited as of interest for the teaching of intra-oral fast dissolved formulations.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan T. Tran whose telephone number is (571) 272-0606. The examiner can normally be reached on M-R from 6:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page, can be reached at (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

THURMAN K. PAGE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600